

REMARKS

Applicant respectfully requests reconsideration of this application in view of the foregoing amendment and following remarks.

Status of the Claims

Claims 1-18 are pending in this application in which claims 1 and 10 are independent. Claims 1, 2, 6-10, 13, 14, 17 and 18 have been rejected. Claims 3-5, 11, 12, 15 and 16 have been indicated as allowable if rewritten in independent form. By this amendment, claims 8 and 14 have been cancelled. Claim 1 has been amended. No new matter has been added by this Amendment.

Rejections under 35 U.S.C. §112

Claim 8 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claim 14 has been rejected under the same category because of its dependency from claim 8.

Claims 8 and 14 have been cancelled and thus, the rejections to these claims are now moot.

Reconsideration and withdrawal of the rejection of claims 8 and 14 under 35 U.S.C. §112, second paragraph, is respectively requested.

Rejections under 35 U.S.C. §102

Claims 1, 2, 6, 9 and 13 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,438,282 to Takeda et al. ("Takeda").

Takeda discloses a low-loss optical switching device capable of responding at a high speed. Takeda's optical switching device in an embodiment includes a light guide 20, a switching part 30 and a driving part 40 as shown in Fig. 42. The switching part 30 is configured to extract

evanescent light from the light guide when a light-transmissive extraction plane of the switching part is brought into contact with the light guide by the driving part. In particular, the driving source for driving the switching part uses electrostriction produced by the piezoelectric element 99. See also column 42, lines 20-23 of Takeda.

As Applicant understands it, Takeda's light switching part is not capable of forming "a reflective diffraction grating" as specifically recited in claim 1 of the present invention. Takeda's switching part is to extract evanescent light from the light guide 20 when a light-transmissive extraction plane of the switching part is brought into contact with the light guide by the driving part as discussed above. Accordingly, claim 1 is not anticipated by Takeda for at least these reasons.

Nonetheless, claim 1 has been amended for further clarification. In particular, claim 1 as amended recites that "wherein a reflecting surface of at least one of the plurality of elements is supported in a length direction by a piezoelectric element when driven in a direction of height by the piezoelectric element."

Applicant believes that Takeda further fails to show or suggest the amended feature of claim 1, and claim 1 is neither anticipated by nor rendered obvious in view of Takeda for at least the reasons discussed above.

Reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102(e) is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 7, 10, 17 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over either Takeda alone or in view of U.S. Patent No. 5,490,009 to Venkateswar et

al. ("Venkateswar").

In rejecting claim 10, the Examiner indicated that it would have been obvious to one skilled in the art to use a video signal in the display of Takeda since video signals are commonly used in micro-mirror displays as shown in Venkateswar.

Venkateswar discloses that a DMD has an array of tiny tilting mirrors caused to selectively tilt, and the light is selectively reflected from each mirror according to input image data so as to display an image, so that each DMD 25 receives each other sample of input data sampled at a double rate and two images generated from two DMD are superimposed and simultaneously displayed to thereby enhance the resolution.

However, neither Takeda nor Venkateswar show or suggest an optical modulation element capable of forming a reflective diffraction grating as required by claim 10 of the present invention. Moreover, neither Takeda nor Venkateswar discloses that "wherein a reflecting surface of at least one of the plurality of elements is supported in a length direction by a piezoelectric element when driven in a direction of height by the piezoelectric element" as recited by claim 10 which incorporates the optical modulation element of claim 1 as amended.

Accordingly, Applicant believes that claim 10 is neither anticipated by nor rendered obvious in view of both Takeda and Venkateswar, either taken alone or in combination, for at least the reasons discussed above.

Reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. §103(a) is respectfully requested.

Applicant has not individually addressed the rejections of the dependent claims because Applicant submits that the foregoing places the independent claims from which they respectively

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Docket No.: 1232-4709
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depend in condition for allowance. Applicant however reserves the right to address such rejections of the dependent claims should such be necessary.

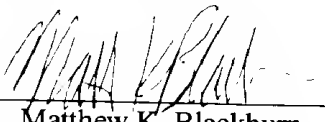
Claims 3-5, 11, 12, 15 and 16 have been objected to as depending from rejected base claims. Applicant respectfully submits that, as the independent claims from which the objected to claims depend are hereby placed in condition for allowance, these claims as pending are thereby also placed in condition for allowance. Withdrawal of the objection is respectfully requested.

AUTHORIZATION

A petition for a one-month extension of time along with the associated fee is enclosed, extending the date for responding until March 6, 2003. Should an additional extension of time be required to render this paper timely filed, such extension is hereby petitioned and the Commissioner is authorized to charge any other fees necessitated by this Amendment, or credit any overpayment to our Deposit Account No. 13-4500 (Order No. 1232-4709). **A DUPLICATE COPY OF THIS SHEET IS ENCLOSED.**

An early and favorable examination on the merits is respectfully requested.

Respectfully submitted,
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Dated: March 6, 2003

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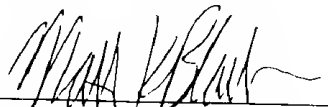
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Version with Markings to Show Changes Made

Please amend claim 1 as follows.

1. (Amended) An optical modulation element capable of forming a reflective diffraction grating in which heights of a plurality of elements each having a reflecting surface periodically change,

wherein the reflecting surface[s] of at least one of the plurality of elements [are] is supported in a length direction by a piezoelectric element when driven in a direction of height by the piezoelectric element[s].